Liang Bai on the Economic Consequences of the Cultural Revolution

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Economic Consequences of the Cultural Revolution

by Liang Bai

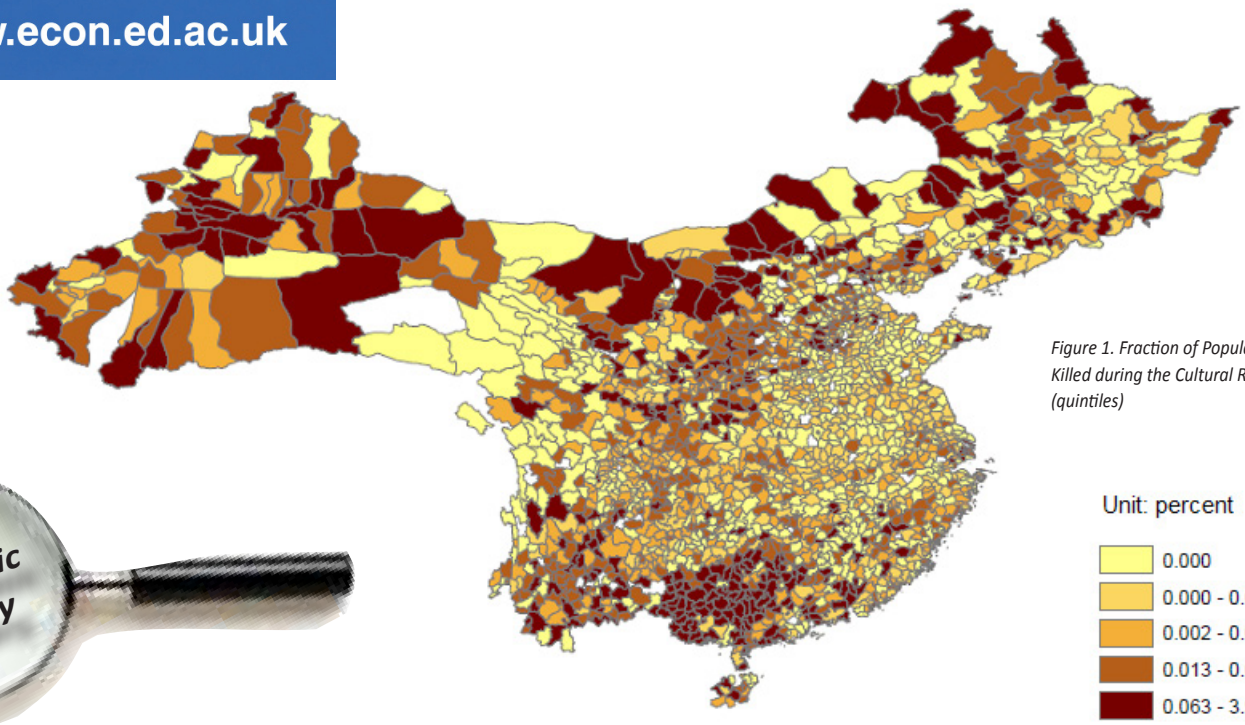

Figure 1. Fraction of Population Killed during the Cultural Revolution (quintiles)

The Cultural Revolution is a watershed moment in 20th-century Chinese history. Spanning a decade from 1966 to 1976, it constitutes the final years of Mao Zedong's chairmanship, and shortly precedes the country's economic liberalization. Intended as a campaign to consolidate the communist revolution of 1949 by "cleansing the class ranks" of "bourgeois elements," its accompanying violence and chaos is widely believed to have had a major impact on Chinese society. My research project explores the economic consequences of this period, focusing on the rural experience.

With its purported goals of tackling inequality and forestalling a "capitalist restoration," the "Great Proletarian Cultural Revolution" was a catastrophic event for large sections of the population, especially members of the educated elite. All across China, because of their perceived lack of commitment to socialism, individuals with so-called "bad class backgrounds" (e.g. former landlords, rich peasants, intellectuals) were particularly at risk (Su 2011). Existing estimates of the number of fatalities range from 250,000 to 1.5 million, while that of victims, including those imprisoned and otherwise persecuted, is closer to 30 million (Walder and Su 2003). In addition to this targeted violence, there was widespread disruption to the functioning of government services, most notably the closure of schools and universities. Taken together, this has often led to the cohorts growing up during this period being labelled as China's "lost generation".

Although perhaps the most direct, the loss of human capital is only one channel through which the revolution may have affected the country's subsequent economic development. Another potential channel is the erosion of social capital. Violence within communities may have made trust and cooperation more difficult, thereby worsening the functioning of informal credit and risk-sharing institutions. Yet another potential consequence of exposure to violent conflict is an induced change to one's time and risk preferences. Previous studies have found that such experiences can cause people to be more impatient and risk-seeking (Callen et al. 2011; Voors 2012). This in turn has many important implications for savings and investment decisions.

Finally, the revolution is often thought to have influenced the timing and choice of economic policies during the reform era (Xu 2011). One key example was the de-collectivization of agriculture and the introduction of the "household responsibility system," which made agricultural households the residual claimants of their output, and enabled the return of rural markets. The decision of when to implement this policy varied substantially across regions. This heterogeneity allows for the testing of two competing hypotheses. On the one hand, if the revolution succeeded in shaping ideologies, more revolutionary areas would have been more reluctant to embrace these market-oriented reforms. On the other hand, the revolution's excesses may have accelerated the

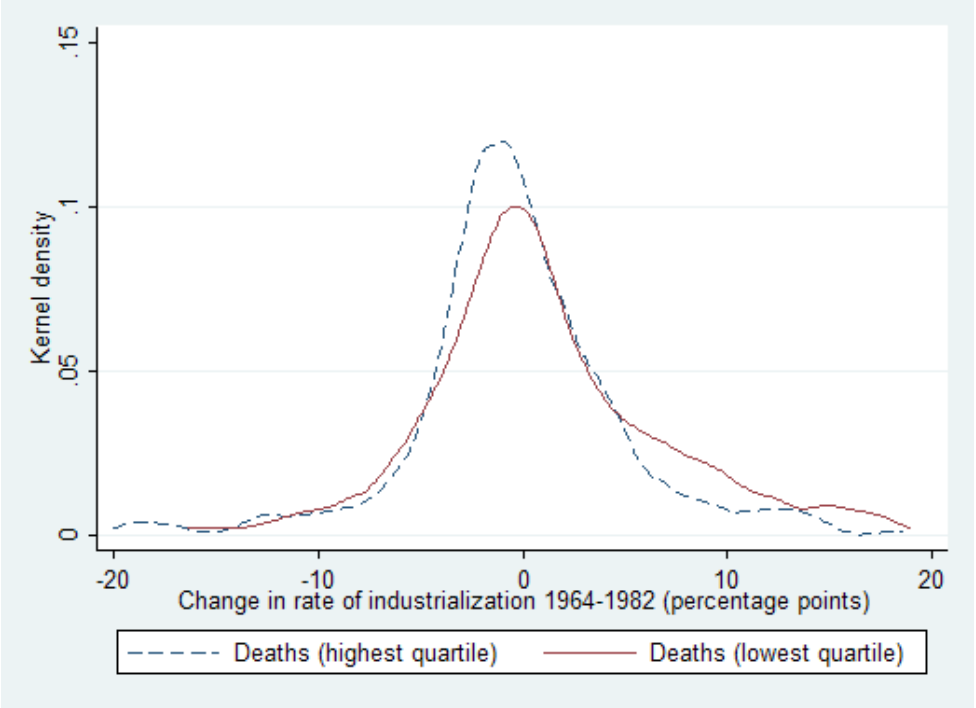

Figure 2. Kernel Density Plots of Industrialization by Revolutionary Intensity

pace of economic reform, due to a "reactionary backlash" effect, in which case worse-affected areas would have liberalized sooner.

While there is no shortage of theoretical mechanisms through which this period may have influenced subsequent economic development, it has not been possible to explore them systematically until now, mainly due to a lack of data. In my paper, I construct a county-level panel dataset of economic outcomes using regional gazetteers and population censuses, combined with rare data on the extent of violence during the revolution (Walder and Su 2003).

A key challenge to estimating the causal impact of revolutionary intensity on economic outcomes is the presence of potential confounding factors. To address this, I control for pre-revolution outcomes and province fixed effects in the econometric estimation. Moreover, temporary fluctuations in local economic conditions during the violence years, as driven by climate shocks, provide one source of plausibly exogenous variation in violence intensity.

In terms of the determinants of revolutionary activity, areas with a higher male-to-female gender ratio among 15-24 year-olds in 1970 experienced greater levels of violence. This is perhaps unsurprising, given the role of the largely-male ``Red Guards'' as perpetrators. Second, areas with abnormal levels of precipitation (i.e. either drought or flooding) during the late-1960s experienced less violence. A likely explanation for this relationship is that individuals and local governments focused on dealing with agricultural shortages diverted their efforts and attention away from "struggling against class enemies" as part of the revolution.

This relationship between transitory shocks to agricultural income and revolutionary intensity enables the estimation of the latter's impact on subsequent economic outcomes. An instrumental-variables strategy is used to address both omitted variable bias and classical measurement error. A key identifying assumption is that climate shocks in the late-1960s should not have long-term impacts of their own. Reduced-form estimates using climate shocks from nearby, non-revolution years indeed find this to be the case.

The empirical results show large and negative effects of revolutionary intensity on economic outcomes, such as the extent of industrialization and per-capita output. These impacts are detectable more than thirty years later, with some beginning to decline at longer time horizons. For instance, an increase in reported deaths of 50 persons (compared with an average of 86 persons per county) is estimated to have caused a 17% decrease in the fraction of population employed in industry in 1982. The magnitude of this effect is reduced to 11% by 1990. Both are significant at the 95% level of confidence. By 2000, the estimated magnitude is further reduced to 3%, and no longer statistically significant. The effect on per-capita GDP is equally large. Here an increase in reported deaths of 50 persons is associated with a 10% decrease in 1982. Moreover, this effect appears to be more persistent, with an estimated magnitude of 15% in 2000. Both results are again significant at the 95% level.

In terms of mechanisms, there is evidence to support the human capital channel, in that worse-affected areas tend to have significantly fewer college graduates as a percentage of their populations. Furthermore, these areas have been less successful at attracting migrants during the post-1978 reform era. As for the timing of policy reforms, there does not appear to be systematic differences along the lines of revolutionary intensity.

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